"Games Galore"

A feasibility study to investigate the effect of a physical activity and nutrition education programme for 10-14 year old New Zealand overweight and obese children

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Players of the Auckland Blockbuster Basketball team and some of the participants' of the "Games Galore" feasibility study in action.

Abstract

It is widely acknowledged that obesity has emerged as an epidemic in developed countries during the last quarter of the 20th century [1]. It is an issue of great concern, affecting adults and children of both wealthy and middle-income people in both middle-income countries as well as residents of countries previously considered to be poor [2]. The World Health Organisation has stated that the prevalence of obesity and overweight is increasing in both adult and childhood populations throughout the world, and has acknowledged management of obesity as a priority area of public health action [1].

This feasibility study "Games Galore" investigated the effect of a physical activity and nutrition education intervention for the development of ongoing self-motivated participation in physical activity and of healthy eating habits of both male and female 10-14 year old New Zealand overweight or obese children.

Twenty-two students of an intermediate and a full primary school enrolled in the "Games Galore" feasibility study. The participants were all residents of West Auckland, New Zealand and participated twice weekly in a games programme and once every fortnight in a nutrition education programme. Anthropometric data was collected at baseline, 4 months, 6 months (end of the intervention), 10 months (4 months post intervention), and 16 months (10 months post intervention). A qualitative dietary habit questionnaire, a diet and activity questionnaire, a food frequency questionnaire, a 3 day diet and physical activity diary, and a three 24-hour recalls were administered to assess nutrient intake and physical activity.

There was no significant change seen in any of the assessed anthropometric indicators from baseline to 16 months post intervention. Some positive change was seen for outdoor play during weekdays ($p=0.02$). However, there was no significant change in any of the other measurements for physical activity, indicating no increase in self-motivated participation in physical activity. There was also no change in dietary intake during and post intervention, indicating no change in eating habits.

During this 16 months "Games Galore" feasibility study (6 month intervention, 10 month follow-up) there was no significant change in the participants' participation of physical activity and the participants' eating habits. This is most likely due to the implementation of too few predictors of childhood overweight and lack of parental support. The latter limits the results due to lack of stimulation and motivation for the participants to participate at the nutrition education sessions and incorporate a "healthy" lifestyle

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List of Abbreviations Used

Abbreviation	Full word(s)	Abbreviation	Full word(s)
BIOSIS	biological abstracts	BMI	body mass index
BMR	basal metabolic rate	CI	confidence interval
CINAHL	cumulative index to nursing and allied health literature	CHD	coronary heart disease
CHO	carbohydrate	cm	centimeter
CT	computed tomography	CVD	cardiovascular disease
DEXA	dual energy x-ray absorptiometry	DLW	double-labelled water
DRV	dietary reference values	E exp	energy expenditure
E int	energy intake	EMBASE	biomedical and pharmacological abstracts
FFQ	food frequency questionnaire	g	grams
HR	heart rate	IOTF	international obesity taskforce
Kcal	kilo calories	kg	kilograms
kg/m^2	kilograms per square meter	kJ	kilojoules
m	meter	MANOVA	multiple analysis of variance
MEDLINE	medical literature, analysis, and retrieval system online	MJ	megajoules
MRI	magnetic resonance imaging	n	number
NIDDM	non insulin dependent diabetes mellitus	NHANES	national health and nutrition examination survey
NZ	New Zealand	p	power
RDA	recommended dietary allowance	RDI	recommended dietary intake
RMR	resting metabolic rate	SD	standard deviation
TEF	thermic effect of food	TV	television
USA	United States of America	VO2max	maximum value of oxygen
WHO	World Health Organisation	WHR	waist to hip ratio
%	percent	$	dollar